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EXAMINER	
XAVIER, ANTONIO J	

ART UNIT	PAPER NUMBER
2629	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/583,533	WEITBRUCH ET AL.	
	Examiner	Art Unit	
	ANTONIO XAVIER	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 June 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5,7-12,15-18,20,22-27 and 30* is/are rejected.

7)☒ Claim(s) *4,6,13,14,19,21,28 and 29* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 June 2006* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *6/16/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to because Fig. 15 contains overlapping text which is difficult to read (item 17). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claims 6-15 and 19 are objected to because of the following informalities:

a. Claims 6-8 and 19 contain various typographical and grammatical issues;

b. Claim 7 should be amended as follows "Method according to ~~one~~ claim ~~1 to 6~~, ~~characterized in that~~ wherein it further comprises the following steps" (emphasis in original). Examiner notes it appears the claim was amended to remove a multiple dependency. However, Examiner notes the amendment failed to provide a parent claim. Examiner is interpreting the claim to depend from Claim 1 for the remainder of this office action; and

c. Claims 8-15 are dependent on Claim 7 and objected to for substantially the same reasons.

Appropriate correction is required.

3. Claims 18 and 27 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Examiner notes Claims 18 and 27 depend from Claim 16, a device (i.e., claim directed towards physical structure). The limitations of Claim 18 (setting a minimal load to 10%) and Claim 27 (setting a minimum range of sustain pulses stored in a LUT) do not require a change in structure and therefore fail to further limit the subject matter of

the parent claims (Examiner notes the claimed limitations are directed towards method steps performed by software etc. rather than physical structure of a device).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-3, 5, 7-12, 15-18, 20, 22-27 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuriyama et al. (U.S. Pat. No.: 6,100,859).

With respect to Claim 1, Kuriyama teaches a method for processing data of a picture to be displayed on a display panel with persistent luminous elements during a frame comprising a plurality of subfields, each subfield comprising an addressing phase during which the luminous elements of the panel are activated or not in accordance with the picture data and a sustain phase during which the activated luminous elements are illuminated by sustain pulses, wherein it comprises the following steps (Figs. 1-34 teach various plasma displays with addressing and sustaining subfields):

computing, for each subfield, the amount of activated luminous elements in each line of luminous elements of the display panel, called line load (Col. 21, line 20-Col. 28,

line 57 teach various embodiments to adjust a display based on subfield line loads. Examiner notes Col. 22, line 11-Col. 23, line 27 teach a specific embodiment determining the display load luminance for each subfield),

calculating, for each subfield, the maximal difference of line loads of two consecutive lines of the display panel (Col. 11, line 30-Col. 21, line 18 teach various embodiments to adjust a display based on a plurality of blocks including at least one line. Examiner notes Col. 11, lines 30-40, Col. 15, lines 51-55, Col. 16, line 1-Col. 17, line 17 teach a specific embodiment calculating the difference of line loads for each subfield. Examiner further notes the limitation "two consecutive lines" includes a block of two lines. Col. 22, line 63-Col. 23, line 27 and Col. 25, line 13-Col. 27, line 21 teach the use of the maximal difference in determining the sustain frequency) , and

selecting, for each subfield, a sustain frequency in accordance with its maximal load difference in order to reduce line load effect (Col. 11, line 30-Col. 21, line 18 teach various embodiments to adjust a display based on a plurality of blocks including at least one line. Examiner notes Col. 11, lines 30-40, Col. 15, lines 51-55, Col. 16, line 1-Col. 17, line 17 teach a specific embodiment calculating the difference of line loads for each subfield. Examiner further notes the limitation "two consecutive lines" includes a block of two lines. Col. 22, line 63-Col. 23, line 27 and Col. 25, line 13-Col. 27, line 21 teach the use of the maximal difference in determining the sustain frequency).

However, Kuriyama fails to expressly teach all of the limitations in a single embodiment (emphasis added). It would have been obvious to one of ordinary skill in the art to apply the various known teachings of Kuriyama to adjust the sustain frequency

based on line loads for blocks of lines and subfield loads because one of ordinary skill in the art would have recognized that applying the known techniques would have yielded predictable results and resulted in an improved system.

With respect to Claim 2, Kuriyama teaches the method according to Claim 1, discussed above. However, Kuriyama fails to expressly teach wherein the calculation of the maximal load difference is only carried out only for lines whose load is greater than a minimal load (emphasis added).

Examiner takes official notice that performing an operation only after a condition has been met is well known in the art. Examiner notes this is commonly known as a threshold. It would have been obvious to one of ordinary skill in the art to apply the known technique of checking a threshold to the display adjustment of Kuriyama such that the calculation of the maximal load difference is only carried out only for lines whose load is greater than a minimal load because one of ordinary skill in the art would have recognized that applying the known techniques would have yielded predictable results and resulted in an improved system. Examiner further notes that selectively performing display adjustment for a maximal load differences over a specific threshold (i.e., minimal load) would conserve power and save processing time if an image does not need adjustment.

With respect to Claim 3, Kuriyama teaches the method according to Claim 2, discussed above. However, Kuriyama fails to expressly teach wherein the minimal load

for a line is equal to 10% of the amount of luminous elements in a line of the display panel (emphasis added).

At the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to set the threshold for the minimal load to 10% of the amount of luminous elements in a line of the display panel because Applicant has not disclosed that setting the minimal load to 10% provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with a threshold for the minimal load set to 10% because thresholds are well known in the art and the display adjustment of Kuriyama is capable of including any arbitrary threshold to improve functionality and performance. Therefore, it would have been an obvious matter of design choice to set the threshold for the minimal load to 10% of the amount of luminous elements in a line of the display panel.

With respect to Claim 5, Kuriyama teaches the method according to Claim 1, discussed above, wherein the number of sustain pulses of each subfield is adjusted in accordance with the number of luminous elements to be activated for displaying the current picture and with the selected sustain frequency for said subfield (Col. 2, lines 7-33, Col. 11, line 30-Col. 21, line 18 and Col. 22, line 63-Col. 23, line 27 and Col. 25, line 13-Col. 27, line 21 teach various embodiments adjusting the sustain pulses for displaying a selected sustain frequency of subfields).

With respect to Claim 7, Kuriyama teaches the method according to Claim 1, discussed above, wherein it further comprises the following steps:

encoding the picture data into subfield data (Col. 2, lines 7-33 teach the use of subfields to obtain gray scale values),

calculating the load of each subfield on the basis of said subfield data (Col. 2, line 7-Col. 3, line 65, Col. 21, line 20-Col. 28, line 57 teach various embodiments that calculate subfield line loads), and

adjusting the number of sustain pulses of the subfields on the basis of their loads in order to have a same relation of proportionality between the luminance produced by the persistent luminous elements for the subfields and their weights (Col. 11, line 30-Col. 21, line 18, Col. 22, line 63-Col. 23, line 27 and Col. 25, line 13-Col. 27, line 21 teach various embodiments adjusting the number of sustain pulses on the basis of load and subfield weights).

With respect to Claim 8, Kuriyama teaches the method according to Claim 7, discussed above, wherein for adjusting the number of sustain pulses of a subfield, it comprises the following steps:

providing a first number of sustain pulses for said subfield (Col. 11, line 30-Col. 21, line 18, Col. 22, line 63-Col. 23, line 27 and Col. 25, line 13-Col. 27, line 21 teach various embodiments adjusting the number of sustain pulses on the basis of load and subfield weights. Examiner notes the original picture data provides a first number of sustain pulses),

defining a correction value to be subtracted to said first number of sustain pulses on the basis of the load and the first number of sustain pulses of said subfield (Figs. 20-21, 26 and 30 and Col. 21, lines 32-51, Col. 23, lines 46-61 and Col. 25, lines 1-39 teach LUTs with correction data);

subtracting said correction value from said first number of sustain pulses in order to have a second number of sustain pulses for said subfield (Col. 11, line 30-Col. 21, line 18, Col. 22, line 63-Col. 23, line 27 and Col. 25, line 13-Col. 27, line 21 teach various embodiments adjusting the number of sustain pulses).

With respect to Claim 9, Kuriyama teaches the method according to Claim 8, discussed above, wherein the correction values of the subfields are defined by a look up table with the load and the number of sustain pulses of said subfield as input signals (Figs. 20-21, 26 and 30 and Col. 21, lines 32-51, Col. 23, lines 46-61 and Col. 25, lines 1-39).

With respect to Claim 10, Kuriyama teaches the method according to Claim 9, discussed above. However, Kuriyama fails to expressly teach wherein the correction values stored in the look up table are achieved by the following steps: measuring the luminance produced by a plurality of luminous elements of the display means for all first numbers of sustain pulses comprised between 1 and the first number of sustain pulses M of the highest weight subfield and for a plurality of non-zero loads, determining, for each one of said first numbers of sustain pulses and each one of said loads, the

luminance attenuation compared with a reference luminance measured for the same number of sustain pulses and the highest one of said loads, and computing, for each one of said first numbers of sustain pulses and each one of said loads, the correction value by multiplying the determined luminance attenuation with said first number of sustain pulses (emphasis added).

At the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to achieve the correction values stored in the LUT based on the first numbers of sustain pulses because Applicant has not disclosed that using the first numbers of sustain pulses provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with correction values stored in the LUT based on the first numbers of sustain pulses because LUTs, correction values and sustain pulses are well known in the art and the display adjustment of Kuriyama is capable of using a LUT based on the first numbers of sustain pulses. Therefore, it would have been an obvious matter of design choice to obtain the correction values stored in the LUT based on the first numbers of sustain pulses.

With respect to Claim 11, Kuriyama teaches the method according to Claim 9, discussed above. However, Kuriyama fails to expressly teach wherein the correction values included in the look up table are achieved by the following steps: measuring the luminance produced by a plurality of luminous elements of the display means for a

specific first number of sustain pulses and for a plurality of non-zero loads, determining, for each one of said loads, the luminance attenuation compared with a reference luminance measured for the highest one of said loads, and computing, for each one of said loads and for said specific first number of sustain pulses, the correction value by multiplying the determined luminance attenuation with said specific first number of sustain pulses.

At the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to achieve the correction values based on a specific first number of sustain pulses and for a plurality of non-zero loads because Applicant has not disclosed that using a specific first number of sustain pulses and a plurality of non-zero loads provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with correction values stored in the LUT based on a specific first number of sustain pulses and a plurality of non-zero loads because LUTs, correction values, sustain pulses and non-zero loads are well known in the art and the display adjustment of Kuriyama is capable of using a LUT based on a specific first number of sustain pulses and a plurality of non-zero loads. Therefore, it would have been an obvious matter of design choice to obtain the correction values stored in the LUT based on a specific first number of sustain pulses and a plurality of non-zero loads.

With respect to Claim 12, Kuriyama teaches the method according to Claim 11, discussed above. However, Kuriyama fails to expressly teach wherein the specific first number of sustain pulses is greater than 20 (emphasis added).

At the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to achieve correction values in a LUT based on a specific first number of sustain pulses greater than 20 because Applicant has not disclosed that using greater than 20 for a specific first number of sustain pulses provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with correction values stored in the LUT based on a specific first number of sustain pulses greater than 20 because LUTs, correction values and sustain pulses greater than 20 are well known in the art and the display adjustment of Kuriyama is capable of using a LUT based on a specific first number of sustain pulses greater than 20. Therefore, it would have been an obvious matter of design choice to obtain the correction values stored in the LUT based on a specific first number of sustain pulses greater than 20.

With respect to Claim 15, Kuriyama teaches the method according to Claim 7, discussed above, wherein the calculation of the load of a subfield consists in counting the luminous elements to be illuminated during said subfield (Col. 21, line 20-Col. 28, line 57 teach various embodiments to adjust a display based on subfield line loads.

Examiner notes Col. 22, line 11-Col. 23, line 27 teach a specific embodiment determining the display load luminance for each subfield).

With respect to Claim 16, Kuriyama teaches a device for processing data of a picture to be displayed on a display panel with persistent luminous elements during a frame comprising a plurality of subfields, each subfield comprising an addressing phase during which the luminous elements of the panel are activated or not in accordance with the picture data and a sustain phase during which the activated luminous elements are illuminated by sustain pulses (Figs. 1-34 teach various plasma displays with addressing and sustaining subfields), wherein it comprises:

means for computing, for each subfield, the amount of activated luminous elements in each line of luminous elements of the display panel, called line load (Col. 21, line 20-Col. 28, line 57 teach various embodiments to adjust a display based on subfield line loads. Examiner notes Col. 22, line 11-Col. 23, line 27 teach a specific embodiment determining the display load luminance for each subfield), and for calculating, for each subfield, the maximal difference of line loads of two consecutive lines of the display panel (Col. 11, line 30-Col. 21, line 18 teach various embodiments to adjust a display based on a plurality of blocks including at least one line. Examiner notes Col. 11, lines 30-40, Col. 15, lines 51-55, Col. 16, line 1-Col. 17, line 17 teach a specific embodiment calculating the difference of line loads for each subfield. Examiner further notes the limitation "two consecutive lines" includes a block of two lines. Col. 22,

line 63-Col. 23, line 27 and Col. 25, line 13-Col. 27, line 21 teach the use of the maximal difference in determining the sustain frequency), and

means for selecting, for each subfield, a sustain frequency in accordance with its maximal load difference in order to reduce line load effect (Col. 11, line 30-Col. 21, line 18 teach various embodiments to adjust a display based on a plurality of blocks including at least one line. Examiner notes Col. 11, lines 30-40, Col. 15, lines 51-55, Col. 16, line 1-Col. 17, line 17 teach a specific embodiment calculating the difference of line loads for each subfield. Examiner further notes the limitation "two consecutive lines" includes a block of two lines. Col. 22, line 63-Col. 23, line 27 and Col. 25, line 13-Col. 27, line 21 teach the use of the maximal difference in determining the sustain frequency).

However, Kuriyama fails to expressly teach all of the limitations in a single embodiment (emphasis added). It would have been obvious to one of ordinary skill in the art to apply the various known teachings of Kuriyama to adjust the sustain frequency based on line loads for blocks of lines and subfield loads because one of ordinary skill in the art would have recognized that applying the known techniques would have yielded predictable results and resulted in an improved system.

The further limitations of Claims 17-18 are rejected for substantially the same reasons as Claims 2-3, discussed above (Examiner notes limitations directed to the mere intended use of structure, such as Claim 18, are not given patentable weight in a device claim).

The further limitations of Claim 20 are rejected for substantially the same reasons as Claim 5, discussed above.

The further limitations of Claims 22-27 are rejected for substantially the same reasons as Claims 7-12, discussed above (Examiner notes limitations directed to the mere intended use of structure, such as Claim 27, are not given patentable weight in a device claim).

With respect to Claim 30, Kuriyama teaches a plasma display panel comprising a plurality of persistent luminous elements organized in rows and columns (Figs. 1-34 and Col. 6, line 64-Col. 7, line 44 teach a plasma display comprising rows and columns), wherein it comprises a device according to Claim 16, discussed above, for compensating load effect.

Allowable Subject Matter

6. Claims 4, 6, 13-14, 19, 21 and 28-29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art of record teaches adjusting a plasma display to compensate for load effect but fails to specifically teach (1) adjusting based on maximal load difference of a

current frame and a plurality of preceding frames (Claims 4 and 19); (2) measuring and adjusting in accordance with first and second average power levels (Claims 6 and 21); (3) rescaling the number of sustain pulses to redistribute sustain pulses proportional to the second number of sustain pulses (Claims 13 and 28); and (4) rescaling the number of sustain pulses in order of average power level needed (Claims 14 and 29) (enumeration added).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Takeuchi et al. (U.S. Pub. No.: 2003/0173903) and Koo et al. (U.S. Pat. No.: 6,559,816) teach adjusting the sustain frequency of sub-frames to reduce line load effect..

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANTONIO XAVIER whose telephone number is 571-270-7688. The examiner can normally be reached on M-F 6:30am-12:30pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amare Mengistu can be reached on 571-272-7674. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. X./
Examiner, Art Unit 2629

/Amare Mengistu/
Supervisory Patent Examiner, Art Unit 2629